

33. *Parasites from the Gharial* (*Gavialis gangeticus*, Geoffr.)—By DR. VON LINSTOW, Goettingen. Translated by PAUL BRÜHL. Communicated by N. ANNANDALE. (With 1 plate.)

[The specimens on which Dr. von Linstow has been kind enough to furnish the following report were obtained from two Gharials which died recently in the Calcutta Zoological Gardens. The stomach of one of these also contained an undetermined *Ascaris*. There is no reason to think that the death of the reptiles was in any way due to the parasites.—N. A.]

NEMATODA.

Micropleura vivipara, nov. gen., nov. sp.

Fig. 1-2.

From the mesentery:

The genus *Micropleura* is related to *Filaria*; the anterior end is provided with neither teeth nor lips; the lateral lines are low and narrow and are without a canal; an excretory pore is wanting, the genus belonging to the Resorbentes; the caudal end is rounded; the male has, on each side, a thickening ending in a papilla; the female is viviparous, and the vulva is not far distant from the middle of the body; spicules of equal size. The muscular system is strongly developed; the lateral lines are feeble, broader outwardly than inwardly, occupying only $\frac{1}{24}$ of the circumference of the body; the anterior end is roundish with 6 papillæ which are arranged in a circle and are little prominent; the oral aperture is small and circular; the length of the œsophagus amounts to $\frac{1}{73}$ of the total length of the body in the male, and to $\frac{1}{4}$ in the female; it commences with a vestibulum which is about one-fourth the length of the œsophagus; the cuticle is smooth; the nerve-ring is situated at the end of the vestibule.

The male is 35 mm. long and 0.72 mm. in diameter; $\frac{1}{580}$ of the total length of the animal is occupied by the caudal end; the latter bears ventrally on each side three small papillæ arranged in an arc, further one postanal papillæ placed on a roundish elevation, on each side, and behind these on one side of the short tail a small papilla; spicules 0.47 mm. long.

The female attains a length of 37 mm. and a width of 0.79 mm.; the tail measures $\frac{1}{35}$ of the total length; the vulva is situated somewhat in front of the middle of the body; it divides the length of the body in the proportion of 5 : 6; attached to the front and back of the uteri are ovaries the length of which amounts to $\frac{1}{16}$ of the length of the body; the sexual organs leave about one-tenth of the body free in front as well as behind. The embryo is 0.57 mm. long and 0.017 mm. in diameter; the cuticle is marked with sharply defined transverse rings, and the caudal end is long and fine-pointed; the anterior end is rounded.

Typhlophoros lamellaris, nov. gen., nov. sp.

Fig. 3-5.

From the stomach :

The genus *Typhlophoros* also belongs to the Resorbentes; the lateral lines are without a canal; they are broad and low, and occupy about $\frac{1}{6}$ of the circumference of the body; the anterior end has 3 lips, and behind these is a cuticular thickening consisting of longitudinal ribs; the lateral lines are raised into longitudinal ridges; on the dorsal side of the œsophagus a cæcal prolongation of the intestines extends right to the anterior end of the body; the males possess two equal spicules. The cuticle is smooth; the anterior end of the body has three lips which are triangular and narrowed at their base; the pulpa is wider in front; the dorsal lip bears two papillæ: behind it is a cuticular thickening which consists of sixteen finely and transversely striated longitudinal ridges, 0.12 mm. long; caudal end pointed; the longitudinal ridge which runs along the lateral lines has an equilaterally triangular cross-section; the intestines possess a high epithelium; in the parenchyma of the intestinal wall occur deep-black oval nuclei.

The male is 11 mm. long and 0.31 mm. in diameter; the caudal end is $\frac{1}{141}$ of the length of the body; on each side of it are placed four preanal papillæ; the equal-sized curved spicules measure 0.60 mm.

In the female, which is 16 mm. long and 0.32 mm. in diameter, two roundish projections are situated in front of the anus, the caudal end occupies $\frac{1}{80}$ of the whole length of the body; the vulva is placed somewhat in front of the middle of the body and divides the length in the ratio of 4:5; the caudal end is curved towards the dorsal surface; the eggs have a thick shell; their length is 0.073 mm., their breadth amounts to 0.062 mm.

LINGUATULIDÆ.

Porocephalus indicus, nov. sp.

Fig. 6-10.

From trachea and lungs :

Only females have been found. Rather young specimens are 20 mm. long and 2 mm. broad; behind the thin anterior end the body is thickened and spindle-shaped, attaining a width of 1.18 mm.; behind this it contracts to a narrow neck 0.79 mm. in diameter; older animals are 24 mm. long and 5 mm. in diameter; the diameter here is nearly uniform. On the ventral side the cuticula is transversely ringed at regular intervals of 0.44 mm., the rings occupying $\frac{2}{3}$ of the circumference; the muscle-fibres run in four directions, transversely, longitudinally, and obliquely in two directions making equal angles with each other; the anterior and posterior ends are roundish. On the lateral edges of the rings there are posteriorly finger-shaped prolongations, which become smaller and

smaller further back, but which can be traced far backwards; exteriorly they possess an annular chitinous thickening (fig. 9); at the anterior end there lies beneath the cuticle an oval ring which is provided in front and behind with a prolongation (fig. 8) and on the right and left of it with two hooks on each side which are directed frontwards and outwards and the points of which project freely; their length is 0.15 mm. The intestinal canal opens at the posterior end; the vaginal aperture is situated closely in front of the anus; the vagina is 1.1 mm. long and 0.044 mm. wide, whilst the width of the uterus, the numerous convolutions of which fill the body-cavity, amounts to 0.16 mm.; the eggs possess a thick hyaline envelop (fig. 10); their length amounts to 0.052 mm. on an average, their width to 0.044 mm., the yolk attaining a length of 0.026 mm. and a width of 0.016 mm. We owe to A. E. Shipley an admirable account of the Linguatulidæ, "An attempt to revise the family Linguatulidæ," in *Arch. de Parasitologie*, vol. I, Paris, 1888, pp. 52-86.

EXPLANATION OF PLATE.

(*s* lateral line, *m* muscular system.)

Fig. 1-2.—*Micropleura vivipara*: 1, caudal end of male; 2 cross-section of lateral line.

Fig. 3-5.—*Typhlophoros lamellaris*: 3, anterior end; 4, caudal end of male, right side; 5, cross-section through lateral line.

Fig. 6-10.—*Porocephalus indicus*: 6, older specimen, and 7, younger specimen, natural size; 8, anterior end, ventral surface; 9, cuticular prolongation; 10, egg.



